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ABSTRACT

Learner-centered principles espoused by the American Psychological Association (APA) built on research of the last three decades suggest that learning does not simply entail coordinated cognitive processes. These 12 principles portray factors associated with learning as essential parts of the portrayal of learners as active creators of their own best answers and solutions. Some of the issues related to active, volitional learners are summarized, with attempts to integrate then in terms of the discovery of personal meaning. The following types of personal meaning that may occur are considered: (1) increased sense of relation of new knowledge to personal events in the learner's life; (2) increased sense of self as learner; (3) increased sense of efficacy related to the capability to use knowledge; and (4) increased expectancy for success and sense of commitment to extend learning. The paper is organized around the idea that the discovery of personal meaning in learning is a vital part of the learning process. The learner is an active constructor of such meanings and may find them more durable than the particular knowledge gained in cognitive fashion. One table lists types of personal meaning that may be acquired. An attachment lists the APA principles. (Contains 61 references.) (SLD)

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The APA Learner-Centered Principles: Implications for Research

A Symposium

The Discovery of Personal Meaning: Affective Factors in Learning

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Presented at the meeting of

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The Discovery of Personal Meaning: Affective Factors in Learning

Learner-centered principles espoused by the American Psychological Association and built upon research generated over the last three decades suggest that learning does not simply entail a set of coordinated cognitive processes. In those twelve principles, factors associated with learning, such as volition, individual perception, self-beliefs, expectations, curiosity, and goal-directedness are viewed as essential parts of the portrayal of learners as active creators of their own best answers and solutions.

The bridging of cognitive and affective learning occurs when the learner discovers personal meaning associated with the information acquired (Combs, 1982). Throughout his writing and research, Arthur W. Combs has provided the most cogent perspective on the relationship between learning and personal meaning. In fact, he says that the personal exploration of meaning "is, at once, the most crucial and the most neglected aspect of teaching (1982, p. 86)." It is on this foundation that the current paper is constructed. Interested readers are encouraged to read extensively in the work of Combs (Combs, 1962, 1982; Combs, Avila, & Purkey, 1978; Combs, Blume, Newman, & Wass, 1974; Combs & Snygg, 1959) for the breadth and depth of understanding of this and related psychological principles. In a somewhat different, but supportive, fashion, this paper

summarizes some of the many issues related to active, volitional learners and attempts to integrate them in terms of the discovery of personal meaning.

Given the impressive knowledge we now possess regarding affective influences on and results of learning, an important implication for educational research is to begin the task of organizing affective factors and cognitive learning into a coherent whole. One way to accomplish that is to consider the ways in which learners discover the personal meaning of knowledge they have acquired or which they are in the process of acquiring.

Consider the basic learning paradigms that emphasize the learner as a receiver of information. Such descriptions of learning certainly capture many of the important aspects of psychomotor and cognitive learning (See, for example, Ausubel, 1968). We obviously do acquire knowledge by listening to the ideas of others, either through personal contact, through electronic media, or through print media. For efficiency of learning nothing quite compares to clear ideas that are clearly expressed. In fact civilization's advancement is predicated upon the effective transmittal of knowledge from one generation to another so that there is no need to reinvent what already exists or already is known. Leaving aside the issues of interpretation of information and even the considerations of what is "knowledge", we can confidently assume that we benefit individually and culturally from knowledge discovered or created by others.

We also can confidently assume that we are not automata that store new information from the environment in unsynthesized, intact form. We actively process much of that information. Descriptions of the cognitive processes associated with active learning are available in other forms, most notably in the companion paper on self-directed learning and on individual differences presented as part of this symposium. What effect, then, does the acquisition of new information have upon the learner?

The following discussion organizes some of the many results of acquiring new knowledge and skills in terms of learners' perception of themselves and their perceptions of the relationship between themselves and the new knowledge. Other results of learning may also be organized around the discovery of personal meaning. The beginnings of a typology of such meanings is provided at the end of this paper (Table 1) in hopes of sparking thought and discussion beyond what can be developed in this paper.

1. **Increased sense of relation of new knowledge to personal events in the learner's life.**

There are few studies directly related to one's own identification with certain kinds of new information, but it appears that recognizing one's own experiences in the experiences of others or in the knowledge that is acquired would also help create personal meaning. In this kind of case, the issue is

whether the learner actually feels connected to the newly acquired information. For example, learning new concepts in a psychology course may lead the learner to compare his or her own experiences with those of others. The recognition that a particular phenomenon has occurred in one's own life and that it has certain formal validity for having been studied gives special meaning to the experience itself. That special meaning may come from a new understanding of one's own experiences from this new perspective or from being able to relate one's experience in such a way that it enables the learner to understand others from the same perspective.

There even is some evidence that constructing examples of new concepts from one's own experiences may improve the retention and understanding of the new information (Gorrell & Downing, 1988; Gorrell, Tricou, & Graham, 1991). Self-generated examples strengthen the personal association between the learner and the material being learned, thus providing more associations within the learner's declarative and propositional network.

In a variety of other settings, the generation effect, where self-generated information is retained better than information which is generated by others, has been found to be effective in learning (Bobrow & Bower, 1969; Crutcher & Healy, 1989; Graf, 1980; Linden & Wittrock, 1981; Reese, 1977; Slamecka & Graf, 1978; Stein & Bransford, 1979). Generation of one's own associations or responses has been found to improve retention and retrieval, apparently by providing multiple ways of accessing

information and by creating additional associations for later learning (Anderson, 1985; Gagne, 1985; Gorrell & Downing, 1988; Hyde & Jenkins, 1973).

In addition to the elaborative nature of acquiring examples of concepts, evidence from research on conditions related to learning declarative knowledge suggests that deeper processing of information and variable contexts for processing information enhance the transfer of information. Deeper processing of concepts using semantic representations should enable a learner to retrieve information by means of more complex sets of associations (Bradshaw & Anderson, 1982; Craik & Tulving, 1975). The presentation of meaningful concepts by means of variable contexts during the acquisition phase leads the learner to being able to recognize broad applications of the concept (DiVesta & Peverly, 1984).

It seems likely that storing a variety of self-generated examples of concepts would entail deep processing by creating personal associations between the examples and the formal representation of the concept. Also, time spent in generating examples provides extra practice of the concepts, and eventual expansion of schemata because of the variable contexts related to the examples provided by the learner. Thus, these supportive processing features of providing one's own examples may contribute to later retrieval. Personal elaborations developed through associations with particular examples or prototypical examples, related to the concept as it is being learned and

modified should provide additional structures for retrieving that concept in appropriate future contexts.

2. Increased sense of self as a learner.

Self-concept studies (Brookover, Thomas, & Paterson, 1964; Calsyn & Kenny, 1977; Marsh & Shavelson, 1985; Purkey, Raheim, & Cage, 1983) conducted over the past three decades indicate that success in academic arenas is an important contributor to one's self-concept as a learner. Distinguishable from global self-concept, self-concept-as-a-learner is affected significantly by academic experiences (Eshel & Kurman, 1991; Fleming & Whalen, 1990; Marsh, 1987, 1990; Marsh & Shavelson, 1988; Skaalvik & Rankin, 1990). This type of personal meaning is intimately associated with learning for many students and understandings of the relationship between self-concept and school achievement have become standard in educational literature (Coopersmith & Feldman, 1974; Epstein, 1973; Fitts, 1981; Purkey, 1970; Purkey & Novak, 1984; Wagner, 1983; Wylie, 1979).

The somewhat generalized sense of self-as-learner is most germane to educational researchers who are interested in issues associated with increasing learners' motivations and desires to succeed. The rich body of literature related to self-as-learner addresses basic questions of direction of change and of the conditions under which self-concept does change.

While it is intuitively appealing to suggest that changes in self-concept-as-a-learner will have dramatic and lasting effects

upon the learner's actual performance in and out of the classroom, there are probably as many studies showing no effects of self-concept change on performance as there are studies showing clear-cut and relatively permanent effects. An alternative concept is that there is a strong effect of experience and success on the learner's self-concept; research that follows this line of inquiry is generally more consistent in demonstrating the effectiveness of success experiences leading to real changes in self-concept. Thus, there appears to be a circular effect of experiences affecting self-concept and of self-concept affecting performance and ultimate success experiences. This complex set of interactions also takes into account the reactions of others to one's own efforts and one's own successes as part of the environment from which the learner discovers meaning. As the next section will show, the exact nature of the information acquired from the environment may play important roles in affecting the learner's beliefs and subsequent efforts.

3. **Increased sense of efficacy related to the capability to use knowledge.**

When someone gains new knowledge, he or she may also learn how to use that knowledge and the conditions under which he or she may be effective in applying it. Personal considerations of effectiveness in using knowledge incorporate issues related to self-efficacy beliefs.

Self-efficacy studies over the past 15 years have shown us many conditions under which persons increase their beliefs in their ability to succeed in certain activities (Andrews & Debus, 1978; Bandura, 1977, 1982; Gorrell & Capron, 1989; McAuley, 1985; Schunk, 1982, 1983; Zimmerman & Ringle, 1981). Bandura's conception of self-efficacy is that it is an important element in the person's decision to allocate effort toward particular goals (Bandura, 1986). Although self-efficacy is generally studied in terms of its relation to individual behavior, it has a rich tradition of studies that investigate the kinds of learning that contribute to efficacy beliefs. Thus, the social environment itself and the individual's interactions with the environment are considered as sources of information that are acquired and interpreted by the learner (in this case, the social learner).

According to Bandura (1977, 1986), there are four sources of personal information that may affect sense of efficacy. As a result of one's own accomplishments, of observing the accomplishments of others, of listening to encouraging (or discouraging) comments from others, and of attending to one's own levels of physiological arousal, a person may increase or decrease his or her sense of efficacy in carrying out particular tasks, of learning new procedures, of understanding new information, or of solving problems. We see from this perspective that the individual may use knowledge, broadly defined, to make predictions about the likely benefits of his or her own actions.

One's own accomplishments (enactive attainments) are generally found to be the most powerful sources of personal information, because success experiences in one area can easily inform the learner about the chances of similar success in that same area or related areas. For example, an early self-efficacy study (Bandura, Adams, & Beyer, 1977) found that subjects who were given a mastery-based treatment raised their levels of perceived efficacy more than those who received vicarious experiences in overcoming phobic reactions to snakes. Studies in educational settings where students were given feedback that enabled them to perceive the results of their efforts or their control over task demands have shown positive results (Andrews & Debus, 1978; RiCharde & Wang, 1985; Schunk, 1982, 1983, 1986). From these studies we see that attainment of short-term personal goals, development of more effective coping behavior, personal understanding of the effectiveness of one's own effort, and personal monitoring of progress toward a goal function as sources of personal information about the learner's chances of further success.

Observing another person's success (vicarious experiences) provide personal information of a similar nature. Although it is not conceived as being as strong a source of personal information as personal mastery (Bandura, Adams, & Beyer, 1977; Bandura, 1986), observing others demonstrate mastery informs persons that they may be able to duplicate the effort and achievement of those successful models. Research on the role of modeling in self-

efficacy change has shown that successful models tend to raise individuals' levels of perceived efficacy (Bandura, 1977; Bandura, Adams, & Beyer, 1977; Gorrell & Capron, 1988, 1989; McAuley, 1985; Schunk & Hanson, 1985; Schunk, Hanson, & Cox, 1987; Zimmerman & Ringle, 1981).

Encouraging comments from other (verbal persuasion) related to mastery (Bandura, Adams, & Beyer, 1977; Bandura, 1986) also may provide useful information to the learner. Since hortatory or encouraging commentary from even powerful figures is ultimately confirmed or disconfirmed through individual experience, these strategies have little long-term effect upon individuals' level of perceived competence. Much important research on the role of verbal persuasion, predating self-efficacy research and theory, has been conducted under the frameworks of self-concept theory and expectancy theory. Studies of teacher expectancy (Combs, Avila, & Purkey, 1978; Good, Biddle, & Brophy, 1975) and encouragement (Coopersmith, 1967; Coopersmith & Feldman, 1974) suggest that verbal persuasion can be effective in raising student's self-concept or esteem, but there also are indications that attempts to enhance self-esteem with praise or flattering comments may have little or no positive effect (Coopersmith & Feldman, 1974). As Bandura (1986) points out, persuasion is most likely to be effective with individuals who already have reasons to believe that they can succeed.

Attending to physiological states, which often are sources of information to individuals about whether they are coping well

with a situation, may affect performance. Since people commonly interpret their levels of anxiety or fear as indicators of their ability to manage situations, reduction of emotional arousal (e.g., anxiety) signals to individuals that they have greater control over their behavior, thereby adding to their sense of self-efficacy (Bandura 1977, 1986).

Extending this analysis to the acquisition of cognitive information or procedures in the classroom, we see that learners may make predictions about whether they actually can use that knowledge in the future. For example, a student learning how to do programming in PASCAL not only acquires specific information about that computer language, but also acquires knowledge of appropriate procedures that can be used in a variety of ways. When learning such things, the learner may also see ways in which those procedures can be used to solve novel computing problems. If the student has had prior successes in using similar procedures to solve programming problems, the student is likely to incorporate those experiences in his or her judgments about the personal usefulness of the new procedures. Combining an understanding of new information into the existing cognitive structure with an understanding of his or own past successes and failures in applying relevant knowledge, the student discovers that he or she can "use this knowledge effectively."

4. Increased expectancy for success and sense of commitment to extend the learning.

From such lines of inquiry as attribution theory (Weiner et al, 1971), we see that learners attempt to make sense out of their unaccustomed successes and failures. In a world where people are oriented toward being able to predict the effects of their actions on the physical and social world, to experience success or failure that outside the ordinarily expectable success or failure creates discomfort that is resolved by seeking an understanding of the causes (Frieze, 1981). Such important dimensions as ability, effort, and luck (Frieze, 1976) may be assessed by the learner in attempting to predict the chances of success in later academic tasks. Weiner (1979) suggests that causal categories related to one's efforts can be categorized meaningfully in various ways in order to understand the thinking processes used by learners.

It has been found consistently that people are more likely to attribute their successes to internal factors, such as their ability or effort, and to attribute failures to external factors, such as luck or difficulties in the environment (Arkin & Maruyama, 1979, Frieze & Weiner, 1971). Self-serving biases such as these may be more than simple attempts to look good in the eyes of others but also may be used to protect oneself from internal anxieties over lack of ability.

From the perspective of discovering personal meaning in learning, the attributional process is another way in which the

individual seeks to understand the cause and effect relationships associated with new experiences. If a child, for example, believes that he is unable to master arithmetic procedures and, to his surprise, actually finds that he is succeeding at those same arithmetic problems that plagued him earlier, he may attach his attributions for that success to the particular experience. The personal meaning of the experience of success may be that he is more capable of learning under certain conditions than he ordinarily believed. That belief, in the long run, probably is more important as a learning than the particular arithmetic knowledge that was gained.

Conclusions

This paper is organized around one prominent idea: that the discovery of personal meaning in learning is a vital part of the learning process. Examples of some types of personal meaning that may occur as a result of the learning process have been introduced in order to suggest the many types of meaning that can be generated. In all cases, whether we are talking about the meanings described briefly above or of other possible meanings, the learner is an active constructor of those meanings and often finds that such meanings are more durable than the particular knowledge gained in cognitive fashion.

In the future more integrative attempts such be made in order to extend the typology that is just begun in this paper and to explore the interrelations among the types of meaning that are discovered by the learner. In doing such integrative work, we

may move closer to a unified view of the learner that is suggested strongly by the APA's twelve learner-centered principles.

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Table 1

Types of Personal Meaning Discovered Through Learning

1.	Increased sense of relation of new knowledge to personal events in the learner's life ("I experienced this").
2.	Increased sense of self as learner ("I can learn this kind of material").
3.	Increased sense of efficacy related to the capability to use knowledge ("I can use this knowledge effectively").
4.	Increased curiosity and sense of commitment to extend the learning ("I want to know more").
5.	Increased sense of participation in knowledge generation ("I helped create this result").
6.	Increased sense of deep understanding ("Learning this helps me understand something else").
7.	Increased ability ~~to~~, in learning, to think in terms of that knowledge ("Using that idea, I can apply it to the problem at hand").
8.	A subjective feeling of knowing ("I possess this knowledge").
9.	Increased ability to see implications for the future ("I understand the implications of this").
10.	Changes in world view ("I believe this to be true").
11.	Increased ability to use knowledge to attain personal goals ("This will help me later").

Note: The number of items in this tentative list may increase as new types of personal meaning are identified.

Learner-Centered Psychological Principles

The following twelve psychological principles pertain to the *learner and the learning process*. They focus on psychological factors that are primarily internal to the learner, while recognizing external environment or contextual factors that interact with these internal factors. These principles also attempt to deal holistically with learners in the context of real-world learning situations. Thus, they must be understood as a whole and not treated insolation. The first ten principles subdivide into those referring to *metacognitive and cognitive, affective, developmental*, and *social* factors and issues. Two final principles cut across the prior principles and focus on what we know about *individual differences*. Finally, the principles are intended to apply to *all learners*, pre school-aged and beyond.

Metacognitive and Cognitive Factors

Principle 1: Learning is a natural process that is active, volitional, and internally mediated; it is a goal-directed process of constructing meaning from information and experience, filtered through each individual's unique perceptions, thoughts, and feelings.

Students have a natural inclination to learn and pursue personally relevant learning goals. They are capable of assuming personal responsibility for learning--monitoring, checking for understanding, and becoming active, self-directed learners--in an environment that takes past learning into account, ties new learning to personal needs, and actively engages students in their own learning process. In meaningful life situations, even very young children naturally engage in self-directed learning activities in pursuit of personal goals. During the learning process, individuals create and construct their own meanings and unique interpretations based on previously existing understandings and belief systems or "perceptual-cognitive filters."

Principle 2: The learner seeks to create internally consistent, meaningful, and sensible representations of knowledge regardless of the quantity and quality of data available.

Learners generate integrated, "common sense" representations and explanations for even poorly understood or communicated facts, concepts, principles, or theories. The operation of learning processes is holistic in the sense that internally consistent understandings emerge--understandings that may or may not be valid from an objective, externally-oriented perspective. With increased exposure to "facts" within a knowledge domain, however, learners can increasingly refine their conceptions as they see the inconsistencies and the need to revise prior conceptions.

Principle 3: The learner organizes information in ways that associate and like new information with existing knowledge in memory in uniquely meaningful ways.

Given that backgrounds and experiences of individual learners can differ dramatically, and given that the mind works to link information meaningfully and holistically, learners will organize and

link information in ways that are uniquely meaningful to them. In formal educational contexts it is desirable for all learners to create shared understandings and conceptions regarding fundamental knowledge and skills that define and lead to valued learning outcomes. In these situations, learning can be facilitated by assisting learners in acquiring and integrating knowledge, e.g., by teaching them strategies for constructing meaning, organizing content, accessing prior knowledge, relating new knowledge to general themes or principles, and storing or practicing what they have learned.

Principle 4: Higher order strategies for "thinking about thinking"--for overseeing and monitoring mental operations--facilitate creative and critical thinking and the development of expertise.

During early to middle childhood, learners become capable of a metacognitive or executive control level of thinking about their own thinking that includes self-awareness, self-monitoring, and self-regulation of the processes and contents of thoughts, knowledge structures, and memories. Learners' awareness of their personal agency or control over thinking and learning processes promotes higher levels of commitment, persistence, and involvement in learning. The facilitative aspects of self-awareness of agency are best realized in settings where learners' intentions and goals are respected and accommodated.

Affective Factors

Principle 5: The depth and breadth of information processed, and what and how much is learned and remembered, is influenced by (a) self-awareness and beliefs about one's learning ability (personal control, competence, and ability); (b) clarity and saliency of personal goals; (c) personal expectations for success or failure; (d) affect, emotion, and general states of mind; and (e) the resulting motivation to learn.

The rich internal context of beliefs, goals, expectations, feelings, and motivations can enhance or interfere with learners' quality of thinking and information processing. The relationship between thoughts, mood, and behavior underlies individuals' psychological health and functioning as well as their learning efficacy. Learners' interpretations or cognitive constructions of reality can create barriers to positive motivation, affect, learning, and performance. Although negative thoughts and feelings can adversely affect motivation and learning, positive learning experiences can help reverse negative thoughts and feelings and contribute to positive motivation to learn.

Principle 6: Individuals are naturally curious and enjoy learning in the absence of intense negative cognitions and emotions (e.g., insecurity, worrying about failure, being self-conscious or shy, fearing corporal punishment or verbal ridiculing or stigmatizing labels).

Positive motivation for learning is largely dependent on helping to bring out and develop

students' natural curiosity or intrinsic motivation to learn, rather than "fixing them," giving them something they lack, or driving them by fear of corporal punishment or excessive punishments of any kind. At the same time both positive interpersonal support and instruction in personal self-control strategies can offset factors that interfere with optimal learning (such as low reflective self-awareness; negative personal beliefs; lack of personal learning goals; negative expectations for success; and anxiety, insecurity, or pressure that makes learning aversive).

Principle 7: Curiosity, creativity, and higher order thinking processes are stimulated by learning tasks of optimal difficulty, relevancy, authenticity, challenge, and novelty for each student.

Positive affect, creativity, and flexible and insightful thinking is promoted in contexts which learners perceive as personally relevant and meaningful, and in which they have opportunities for choices in line with their interests. Higher order thinking skills and creativity are elicited when students have opportunities to work on projects that are at a level of complexity and duration that is comparable to real-world issues and problems. In addition, curiosity is enhanced when students have opportunities to work on learning tasks of optimal difficulty, challenge, personal relevancy, and novelty for them individually.

Developmental Factors

Principle 8: Individuals proceed through orderly, identifiable progressions of physical, intellectual, emotional, and social development that are a function of unique genetic and environmental factors.

Children learn best when material is appropriate to their developmental level, presented in an enjoyable and interesting way, while at the same time challenging their intellectual, emotional, physical, and social development. Unique environmental factors (e.g., the quality of language interactions between adult and child and parental involvement in the child's schooling) can influence development in each area. An overemphasis on developmental readiness, however, may preclude learners from demonstrating that they are more capable intellectually than schools, teachers, or parents allow them to show. Awareness and understanding of unique developmental differences of children with special emotional, physical or intellectual disabilities as well as special abilities leads to an increased ability to create maximally facilitative learning contexts.

Social Factors

Principle 9: Learning is facilitated by social interactions and communication with others in a variety of flexible, diverse (cross-age, culture, family background, etc.), and adaptive instructional settings.

Learning is facilitated by including diverse settings that allow the learner to interact with a variety of students from different cultural and family backgrounds, interests, and values. Divergent and flexible thinking as well as social competence and moral development are

encouraged in learning settings that allow for and respect diversity.

Principle 10: Learning and self-esteem are heightened when individuals are in respectful and caring relationships with others who see their potential, genuinely appreciate their unique talents, and accept them as individuals.

Individual's access to higher-order, healthier levels of thinking, feeling, and behaving is facilitated by quality personal relationships. Teachers' (or other significant adults') states of mind, stability, trust, and caring are preconditions for establishing a sense of belonging and positive climate for learning. Healthier levels of thinking are those that are less self-conscious, insecure, irrational, and/or self-deprecating. Self-esteem and learning are mutually reinforcing.

Individual Differences

Principle 11: Although basic principles of learning, motivation, and effective instruction apply to all learners (regardless of ethnicity, race, gender, presence or absence of physical handicaps, religion, or socioeconomic status), learners differ in their preferences for learning mode and strategies, the pace at which they learn, and unique capabilities in particular areas. These differences are a function of both environment (what is learned and communicated in different cultures or other social groups) and heredity (what occurs naturally as a function of genes and resulting differential capacities).

The same basic principles of learning, motivation, and effective instruction apply to all learners. At the same time, however, learners are born with unique capabilities and talents, and have acquired through learning and social acculturation different preferences for how they like to learn and the pace at which they learn. In addition, it must be recognized that learning outcomes are an interactional and interdependent function of student differences, as well as curricular and environmental conditions. Understanding and accommodating cultural differences and the cultural contexts from which learners emerge enhances the design and implementation of environments that most facilitate the learning of all students.

Principle 12: Beliefs and thoughts, resulting from prior learning and based on unique interpretations of external experiences and messages, become each individual's basis for constructing reality or interpreting life experiences.

Unique cognitive constructions form a basis for beliefs about and attitudes toward others. Individuals then operate out of these "separate realities" as if they were true for everyone, often leading to misunderstandings and conflict. Awareness and understanding of these phenomena allows greater choice in what one believes, more control over the degree to which one's beliefs influence one's actions, and an ability to see and take into account others' points of view. The cognitive and social development of a child and the way that child interprets life experiences is a product of prior schooling, home, culture, and community factors.